PLEASE REVIEW FOR CONTENT, CLARITY AND COMPLETENESS. ALSO PLEASE GIVE INPUT.

THANKS

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COMPREHENSIVE UNIX TRAINING PROGRAM PROPOSAL

Objective

The objective of this proposal is to outline a broad, long term plan to meet our training needs in Unix Systems without adversely impacting schedule commitments ~~and at the same~~ time facilitate retraining needs of the company as a whole, providing trained Engineers and Technicians, qualified for positions in the Unix Organizations.

Purpose

The purpose of the proposed Comprehensive Unix Training Program (CUTP) is to make better use of Unisys resources, both human and equipment, in satisfying employment needs of the Unix Organizations and the retraining needs of the company as a whole in a cost effective manner.

Introduction

The need for in-depth Unix training for our Engineers has been adequately demonstrated during our experience with Micro Products. Satisfying this need can sometimes be problematic. Engineers are often too busy with product commitments to sign up for extended company training classes. And since such classes are usually designed to be five days or less so as not to over impact busy schedules, the classes themselves tend to be restricted as far as the topical depth they can provide and numbers of Engineers each class can accommodate.

We have also found it sometimes to be the case that Unisys Engineers and Technicians with a strong personal interest in Unix and Unix related training, but no background or job needs for Unix, are entirely discouraged from taking company training during working hours so as not to impact their product commitments.

One of the unfortunate results of these conflicting needs is that we are, as a rule, forced to recruit outside of Unisys for our Unix/Micro Products needs. Not only is this a more costly arrangement, but it can have a negative impact on moral.

A second unfortunate result is the constant burden placed on management to choose between a steady flow of schedule commitments and adequate Unix training for Unisys Unix Engineers. ("I'm sorry. I can't let you take that class now. We have a deadline to worry about.")

This proposal is intended to address these issues in a cost effective manner.

Training Proposal

The essence of the CUTP proposal is the concept of after-hours training. Fully 70% of Unisys Software Engineers present in a recent staff meeting of the 5000/70-6000/50 group indicated a strong interest in on-site classes offered after normal working hours and on weekends. By simply offering in-depth training during hours that do not adversely affect schedule commitments, we can eliminate the burden on management to choose between product and employee.

The after-hours concept would also be advantageous to Unisys Engineers and Technicians working on projects that do not have any direct relationship with Unix products. The program could be structured in such a way so as to not require management approval in advance.

Benefits

Such a program would have several major benefits to Unisys. It would allow Engineers and Technicians currently involved in Unix products to enhance their knowledge of the products without sacrificing those involved as schedule resources. It would also facilitate re-training of Unisys Engineers and Technicians not involved in Unix products, allowing both a screening process for Unix managers interested in hiring individuals from the inside and a known, in-depth training schedule that would give Unisys Engineers the background needed to compete with candidates from the outside. In addition, such a program would encourage better and more use of existing equipment.

Costs

(NEED INPUT HERE). This section should deal with the costs in as specific manner as possible. We need to discuss instructor costs, book costs, equipment costs, space costs, administrative costs. We need to discuss

classes in terms of how many people can be accommodated, and if possible give costs on a per person basis.

Cost Justification

The justification for these costs can be realized by examining the following areas, each of which would be directly affected by a program of the kind being proposed here:

- Recruiting. The average recruiting cost per new hire in the Unix/Micro Products area last year was in the neighborhood of $3200. This figure represents the time Unisys staff must spend recruiting at job fairs, traveling costs to various cities, time spent in interviews, and the costs of bringing candidates in for the interview process. This type of activity cannot be eliminated altogether. But considering the cost of this effort, any impact the proposed CUTP Plan can have on this area would be beneficial to the company, and hence cost justification for the CUTP.

- Relocation. Company wide, the average relocation costs for level 9 new hires and above was in the neighborhood of one and one half (1.5) times the first year's salary. This figure represents all travel to and from the new location after an offer was accepted, all temporary accommodation costs including food and various sundry costs, and rental cars. If the actual number of relocations necessary could be reduced by an effective retraining program, these significant costs could be greatly reduced.

- Turnover. Last year, Unix/Micro Products had a turn over rate of 9%. The proposed CUTP Plan could reduce this number, thereby decreasing the cost impact implicit in turnover. If it follows that there is an inverse relationship between turnover and quality/schedule, the justification here for the CUTP Plan is again very clear.

- Corporate Culture. A significant part of any job in the Unix/Micro Products area is a familiarity with the internal players and the roles of each in relationship to how each group should and does interact. The scope of this type of learning curve may be more difficult to assess than one of a technical nature. And yet, this kind of knowledge is just as important to doing a good job as is familiarity with the various product lines. Since we do not have a "Corporate Culture" training program for new-hires, it follows that this kind of training is done on the job, thereby reducing the potential for contribution a new-hire can have for a considerable period of time. Recognizing this, it also follows that current Unisys Engineers and Technicians who already have this kind of knowledge would be just as likely to make contributions, given technical training, as would new-hires who were technically adept.

- **Moral** Although it is difficult to assess the cost of employee morale problems, it seems intuitively clear that low employee morale costs the company and a program of the kind proposed here can raise employee moral, thereby saving the company money.

- **Lay Off Costs.** Currently, if an employee is laid off and that employee has at least five years tenure with the company, that employee is due a minimum of twelve (12) weeks severance pay. In addition, the company must provide a job placement seminar at a cost of anywhere from one to three thousand dollars per employee. The direct costs of unemployment are also significant in this situation. Certainly, the costs involved in a lay off are enough to add justification to a broad based training proposal.

- **Government Reimbursement.** (NEED INPUT HERE). This section should discuss possible Government Reimbursement programs in terms of retraining of employees. (May need some research).

Training Plan - Courses and Prerequisites

Customer Services Education (CSE) currently offers an on-going program of Micro Products related training. A recent copy of a CSE schedule is attached to this proposal. There are a number of courses offered through CSE that would need to be covered in an after-hours training program. Specific classes that CSE offers now that fall into this category include:

- Intro to Unix
- Unix Operation & Administration
- Unix Usage I Workshop
- Unix Usage II Workshop
- 'C' Language I Workshop
- 'C' Language II Workshop
- Intro to MS-DOS

In addition, a number of Unix related classes not offered through CSE that are offered through Education Program Management (EPM) in Princeton, N.J. would also need to be covered in an after-hours training program. These courses include:

- Unix File Management Internals
- Unix Process Management Internals
- Unix SVR3 RFS and Streams Concepts

EPM also offers a number of Unix System V and 'C' Video-Based Training Courses that could be easily incorporated into the complete CUTP schedule. This would allow the CUTP Plan to define curriculum requirements and course content quickly and thoroughly. The Video-Based Training Courses could be a tremendous asset to the CUTP Plan.

In addition to these courses, it would be necessary to provide a number of other courses in order to make an after-hours training program complete and meaningful in terms of the day-to-day activity in the Unix Systems area. Other topics that would need to be covered include:

- Device Drivers in the Unix Environment
- Advanced Unix Device Drivers
- Unix Kernel Debug Techniques
- Communications in the Unix Environment
- Advanced Communications in the Unix Environment
- 'C' Language III Workshop
- Microprocessors I Workshop
- Microprocessors II Workshop
- Microprocessors III Workshop
- The 'vi' Text Editor I Workshop
- The 'vi' Text Editor II Workshop
- The Unisys Culture
- The History of Unix and the Evolution of Unix Standards
- Advanced Technologies Seminar

Since the CUTP Plan is designed to benefit both current Unisys Unix Engineers and Unisys Engineers new to Unix, the following guidelines should be adopted to set proper prerequisites for attending classes.

Course Prerequisites

All Hardware and Software Engineers and Technicians employed by Unisys in activities that relate to Unix Products on a daily basis are eligible to attend any course at any level.

All Hardware and Software Engineers and Technicians employed by Unisys, but not working with Unix Products on a daily basis are eligible to attend training courses, but must satisfactorily complete classes at one level before advancing to the next.

All courses will be offered no less than twice a year or as needed, on an after-hours and weekend basis. All courses will be based on a flexible attendance model designed for working professionals. Attendance records will be required, and some make-up will be tolerated to allow for illness and out-of-town job related activities.

Equip. - supplied by Unisys

All courses will be graded. Either a Pass-Fail grade or a 4 point grading system will be maintained by each course instructor. A Passing grade for a given topic at a given level will be required to advance to the next level. All courses will require both testing and course assignments.

Unisys has some videos they want incl.

All courses will run no more that 8 (eight) weeks. This should allow even the most intensive courses sufficient in-class time to cover a topic in depth, but still permit a short enough period to accommodate rapid advancement through the levels.

+ Proven Skill Level Homework + Testing for each level.

+ Testing (qualifying) (after the fact) (how robust are they

Courses

Four levels of courses will be offered as follows:

- Level I (Introductory). Introductory Courses and Level I Workshops. Courses at this level will include:
  - Intro to Unix
  - Intro to MS-DOS
  - Unix Usage I Workshop
  - 'C' Language I Workshop
  - Microprocessors I Workshop
  - The 'vi' Text Editor I Workshop

  what it is, capabilities, reqmts. of/for, how use it as a CPU

  Motorola, Intel, Risc (~~Mips~~ Sparc)
- Level II (Intermediate). Intermediate Courses and Level II Workshops. Courses at this level will include:
  - Unix Operation & Administration
  - Unix Usage II Workshop
  - 'C' Language II Workshop
  - Communications in the Unix Environment
  - The Unisys Culture
  - The 'vi' Text Editor II Workshop
  - Microprocessors II Workshop
- Level III (Advanced). Advanced Courses and Level III Workshops. Courses at this level will include:
  - Unix File Management Internals
  - Unix Process Management Internals
  - 'C' Language III Workshop
  - Microprocessors III Workshop
  - Unix SVR3 RFS and Streams Concepts
  - Devices Drivers in the Unix Environment
  - The History of Unix and the Evolution of Standards
- Level IV (Wizard). Wizard Courses. Courses at this level will include:

id names of students interested in local job to Jim Martin

Futures:
Software Engr.
Comm.
Data bases
4th Gen. Lang.

- Advanced Unix Device Drivers
- Unix Kernel Debug Techniques
- Advanced Communications in the Unix Environment
- Advanced Technologies Seminar

Training Plan - Instructors, Classrooms and Equipment

Since all courses will be held on-site, those rooms designed to accommodate class-like meetings will be designated as classrooms for the courses on a course size basis. Rooms that fall into this category are B2-1, B2-2, Board Room B, The Education Center in Building 5, etc.

Several options will be available for instructors at the various levels.

For Level III and Level IV courses, professional instructors or seasoned industry professionals will be needed. Some courses may be taught by members of EPM staff from Princeton, bringing the instructor in as needed. Other advanced courses may require professionals from within Unix Organizations, our vendors, the local universities, and even our competitors on an as needed basis. Instructors at this level can be the most costly.

Many Level I and some Level II courses can be taught by current Unisys Unix Engineering staff. Various forms of compensation can be offered to qualified Engineers to encourage them to take on the added responsibility. Examples of compensation are overtime pay, promotion incentives, conference attendance, etc.

The balance of Level I and Level II courses could easily be handled by current local CSE staff. Special arrangements would need to be made to encourage those instructors to participate on an after-hours basis.

Some support equipment will need to be made available for course work. A few of the advanced courses will require dedicated units for course and after course study. For the most part, Level I and Level II courses can be accommodated with a single production machine capable of handling at least 32 users. The advanced courses will require support equipment on an as needed basis. In addition to support units, several dedicated terminals and some printers will be required. Since all courses will be taught on an after hours and weekend basis, it will be possible to share existing equipment without tremendous impact on existing users, thereby increasing the use of these in-house resources.

Funding

(NEED INPUT HERE) This section should detail creative methods for funding the CUTP. Job sharing with other organizations, actual help with funding from other organizations, government reimbursement, etc, should all be detailed here as well as any assist we might be able to get from EPM and CSE. (Not to mention the Unix Systems Organizations themselves.)